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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/626,645

07/25/2003

Douglas G. Placek

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EXAMINER

KHAN, AMINA S

ART UNIT

PAPER NUMBER

1751

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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Office Action Summary	Application No.		Applicant(s)	
	10/626,645		PLACEK ET AL.	
	Examiner		Art Unit	
	Amina Khan		1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 and 27-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 27-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicant's amendments filed on October 23, 2006.
2. Claims 1-25 and 27-42 are pending. Claim 26 has been cancelled. Claims 20, 21 and 29 have been amended. Claims 39-42 are new.
3. The 35 USC 112 rejection over claims 20,21 and 29 is withdrawn in view of applicant's amendments.
4. Claims 1-9,12-19,22-25,31-36 and 38 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen (US 2004/0092409) for the reasons set forth in the previous office action. The rejection of the claims is maintained.
5. In view of applicant's arguments the 35 U.S.C. 103(a) rejection of claims 1 and 27-29 as being unpatentable over Roos et al. (US 2003/0060587) in view of Liesen (US 2004/0092409) is withdrawn.
6. The 35 U.S.C. 103(a) rejection of claims 30 and 37 over Roos et al. (US 2003/0060587) in view of Kinker et al. (JP 08209179) is withdrawn.

7. Claims 10 and 11 stand rejected under 35 USC 103(a) over Liesen (US 2004/0092409) in view of Pizzini et al. (US 3,242,455) for the reasons set forth in the previous office action. The rejection of the claims is maintained.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9,12-20,22-25,31-36,38 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen et al. (US 5,955,405).

Liesen et al. teach alkyl(meth)acrylate copolymers to be used in lubricating oils that comprise from 5 to about 15 weight percent butyl(meth)acrylate, from 70 to about 90 weight percent C₁₀-C₁₅ alkyl(meth)acrylate; and from about 5 to about 10 weight percent of at least one C₁₆-C₃₀ alkyl(meth)acrylate (abstract, paragraph 1, lines 1-6). Liesen et al. further teach lubricating oil compositions for use in hydraulic fluids (column 8, lines 4-8) comprising esters of dicarboxylic acids (column 7, lines 8-30), polyol ethers (column 7, lines 8-30), and phosphorous containing acids (column 7, lines 29-43). Liesen et al. further teach esters of azelaic, sebacic and adipic acids (column 7, lines 10-30) and esters of neopentyl glycol (column 7, lines 25-30). Liesen et al. further teach that the alkyl(meth)acrylate polymers have a molecular weight between 5,000 to 50,000 (column 4, lines 45-55). Liesen et al. further teach that the polymers can be prepared by

non-aqueous dispersion polymerization techniques (column 3, lines 10-20). Liesen et al. further teach that the polymer be used in a quantity of 0.05 to 40 parts by weight per 100 parts by weight base oil (column 5, lines 60-67), which meets the claimed limitation of the weight ratio of polymers to oxygen containing compounds of 2:1 to 1:10. Liesen et al. further teaches the use of the current composition as a hydraulic fluid (column 8, lines 4-8). Liesen further teaches polymerizing the polymer in the diluent, in this case the oxygen containing compound (column 3, lines 10-30; column 6, lines 5-7; column 7, lines 9-43).

Liesen is silent about the claimed properties of the oxygen containing component of the functional fluid of a fire point according to ASTM D 92 of at least 250°C as claimed in claim 2 and a kinematic viscosity at 40°C according to ASTM D 445 of 35 mm²/s or less as claimed in claim 23. Liesen is further silent about the claimed properties of the functional fluid of a fire point according to ASTM D 92 of at least 300°C as claimed in claim 25, a kinematic viscosity at 40°C according to ASTM D 445 of from 28 to 110 mm²/s as claimed in claim 23, a pour point according to ASTM D 97 of -40°C or less as claimed in claim 24, and a Factory Mutual 6390 Group 1 rating as claimed in claim 1. Liesen further does not teach all the claimed components and claimed percentages in a single example.

It would have been obvious to one of ordinary skill in the art to arrive at a fire point according to ASTM D 92 of at least 250°C and a kinematic viscosity at 40°C according to ASTM D 445 of 35 mm²/s since Liesen teaches the equivalent oxygen containing components azelaic acid, sebacic acid, neopentyl glycol, and tricresyl

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phosphate which would have the claimed fire points and kinematic viscosities. It also would have been obvious to arrive at a functional fluid with a fire point according to ASTM D 92 of at least 300°C, a kinematic viscosity at 40°C according to ASTM D 445 of from 28 to 110 mm²/s, a pour point according to ASTM D 97 of -40°C or less, and a Factory Mutual 6390 Group 1 rating since Liesen teaches the equivalent oxygen containing components and alkyl(meth)acrylate polymers. One of ordinary skill in the art would expect similar compositions to have similar properties absent unexpected results.

It would have been further obvious to one of ordinary skill in the art to arrive at the instantly claimed invention by selecting the appropriate components and percentages from the teachings of Liesen because Liesen teaches all the claimed components and the appropriate percentage ranges as useful in functional fluids. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the portion of the prior art's range which is within the range of applicant's claims because it has been held to be obvious to select a value in a known range by optimization for the best results. As to optimization results, a patent will not be granted based upon the optimization of result effective variables when the optimization is obtained through routine experimentation unless there is a showing of unexpected results which properly rebuts the *prima facie* case of obviousness. See *In re Boesch*, 617 F.2d 272, 276, 205 USPQ 215, 219 (CCPA 1980). See also *In re Woodruff*, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936-37 (Fed. Cir. 1990), and *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955). In addition, a *prima facie* case of obviousness exists because the claimed ranges "overlap or lie inside ranges disclosed

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by the prior art", see *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976; *In re Woodruff*, 919 F.2d 1575, 16USPQ2d 1934 (Fed. Cir. 1990). See MPEP 2131.03 and MPEP 2144.05I.

Further, with regard to the limitations of claim 16, the claimed limitations do not need to be met because they are a product by process claim and only the product not the process by which it is produced is given patentable weight. Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. The burden is on applicants to show product differences in product by process claims, see *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Best*, 195 USPQ 430 (CCPA 1977); *In re Fessman*, 180 USPQ 324 (CCPA 1974); *In re Brown*, 173 USPQ 685 (CCPA 1972).

10. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen et al. (US 5,955,405), as applied to the claims above, and further in view of Pizzini et al. (US 3,243,455).

Liesen et al. are relied upon as set forth above.

Liesen et al. do not teach polyalkylene glycols based on butylenes oxide.

Pizzini et al. teach polyether compounds which are condensates of alkylene oxides such as butylenes oxide which are useful in functional fluids and hydraulic fluids because of their new, unique and improved chemical, physical and emulsification properties (column 1, lines 15-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the lubricating oils taught by Liesen et al. by incorporating the polyether polyols taught by Pizzini et al. since Pizzini et al. teach the benefit of improved emulsification when butylenes oxide based polyether polyols are employed as surfactants in hydraulic fluids. It is prima facie obvious to combine the two compositions, each taught for the same purpose, to yield a third composition for that very purpose. *In re Kerkhoven*, 205 USPQ 1069, *In re Pinten*, 173 USPQ 801, and *In re Susi*, 169 USPQ 423 when ingredients are well known and combined for their known properties, the combination is obvious absent unexpected results. A person of ordinary skill in the functional fluid art would expect combinations of these materials to behave in the same fashion as the individual materials, absent unexpected results.

11. Claim 21 is are rejected under 35 U.S.C. 103(a) as being unpatentable over Liesen et al. (US 5,955,405), as applied to the claims above, and further in view of Sluham (US 3,518,917).

Liesen et al. are relied upon as set forth above.

Liesen et al. are silent as to the limitation of anhydrous hydraulic fluid.

Sluham, in the analogous art of lubricating and hydraulic fluids, teaches that anhydrous hydraulic fluids are most desirable to maximize the viscosity of the fluid (column 3, lines 63-69).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compositions of Liesen by incorporating the anhydrous hydraulic fluids taught by Sluham because Sluham teaches the desirability of anhydrous compositions for maximum viscosity of the fluids. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

12. Claims 1,27,28 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roos et al. (US 6,403,746) in view of Liesen et al. (US 5,955,405), as applied to the claims above.

Roos et al. teaches polymer compositions for use in lubricating oils (column 18, claim 14) consisting of 50-100 wt % alkylmethacrylates with 6-40 carbon atoms (column 4, lines 65-67; column 5, lines 1-17), 0-40 wt % methacrylates of formula (III) (column 6, lines 9-20) which includes methyl methacrylate (column 7, lines 3-10), 0-40 wt % component and e) one or more comonomers (column 6, lines 66-67; column 7, lines 1-2), and 5-99% synthetic oils such as organic ethers and esters (column 4, lines 54-65). Components c,d and e of the Roos et al. are optional (0% by weight) and therefore need not be included (column 6, lines 21-66).

Roos et al. is silent as to the type of organic ether or organic esters used in the compositions and does not specifically teach carboxylic acid esters or polyether polyols.

Liesen, in the analogous art of lubricating oils, teaches compositions comprising synthetic lubricating oils which are the esters of dicarboxylic acids (column 7, lines 8-30), polyol ethers (column 7, lines 8-30), and phosphorous containing acids (column 7, lines 29-43).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compositions taught by Roos et al. by incorporating the oxygen containing esters and organophosphorous compounds taught by Liesen because Liesen teaches the utility of these compounds in producing efficient lubricating oils. Further Roos et al. invites the inclusion of organic ester synthetic oils. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

13. Claims 1,30 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roos et al. (US 6,403,746), as applied to the claims above, and further in view of Kinker et al. (JP 08209179).

Roos et al. are relied upon as set forth above. Roos et al. are silent as to the type of organic esters used in the compositions and does not specifically teach neopentyl glycol dioleate.

Kinker et al., in the analogous art of lubricating oils, teaches compositions comprising alkyl methacrylates and 98-99.99 wt percent polyol esters, specifically neopentyl glycol dioleate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the compositions taught by Roos et al. by incorporating the oxygen containing esters taught by Kinker et al. because Kinker teaches the utility of these compounds in producing efficient lubricating oils. Further Roos et al. invites the inclusion of organic ester synthetic oils. One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

14. Claims 1-9,13-20,23-25,27-29,31-34,36,38-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mottus (US 3,311,597).

Mottus teaches hydraulic fluids comprising about 15% of polymers selected from monomers of methyl methacrylate, n-dodecyl methacrylate and 4-p-tolylbutyl-2-octadecenoate (column 2, lines 45-55; column 3, lines 1-29; column 4, lines 50-52) and a fluid component selected from organophosphorous compounds, diesters of carboxylic acids such as sebacate or adipate, and esters such as pentaerythritol tetracaprate (column 6, lines 10-50).

Mottus is silent about the claimed properties of the oxygen containing component of the functional fluid of a fire point according to ASTM D 92 of at least 250°C as claimed in claim 2 and a kinematic viscosity at 40°C according to ASTM D 445 of 35 mm²/s or less as claimed in claim 23. Mottus is further silent about the claimed

properties of the functional fluid of a fire point according to ASTM D 92 of at least 300°C as claimed in claim 25, a kinematic viscosity at 40°C according to ASTM D 445 of from 28 to 110 mm²/s as claimed in claim 23, a pour point according to ASTM D 97 of -40°C or less as claimed in claim 24, and a Factory Mutual 6390 Group 1 rating as claimed in claim 1. Mottus further does not teach all the claimed components and claimed percentages in a single example.

It would have been obvious to one of ordinary skill in the art to arrive at a fire point according to ASTM D 92 of at least 250°C and a kinematic viscosity at 40°C according to ASTM D 445 of 35 mm²/s since Mottus teaches the equivalent oxygen containing components which would have the claimed fire points and kinematic viscosities. It also would have been obvious to arrive at a functional fluid with a fire point according to ASTM D 92 of at least 300°C, a kinematic viscosity at 40°C according to ASTM D 445 of from 28 to 110 mm²/s, a pour point according to ASTM D 97 of -40°C or less, and a Factory Mutual 6390 Group 1 rating since Mottus teaches the equivalent oxygen containing components and alkyl(meth)acrylate polymers. One of ordinary skill in the art would expect similar compositions to have similar properties absent unexpected results.

It would have been further obvious to one of ordinary skill in the art to arrive at the instantly claimed invention by selecting the appropriate components and percentages from the teachings of Mottus because Mottus teaches all the claimed components as useful in functional fluids. One of ordinary skill would have been

motivated to optimize the ranges to those instantly claimed to arrive at a functional fluid with maximal benefits in hydraulic systems.

Further, with regard to the limitations of claim 16, the claimed limitations do not need to be met because they are a product by process claim and only the product not the process by which it is produced is given patentable weight. Any difference imparted by the product by process limitations would have been obvious to one having ordinary skill in the art at the time the invention was made because where the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct, not the examiner to show the same process of making, see *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324. The burden is on applicants to show product differences in product by process claims, see *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985); *In re Best*, 195 USPQ 430 (CCPA 1977); *In re Fessman*, 180 USPQ 324 (CCPA 1974); *In re Brown*, 173 USPQ 685 (CCPA 1972).

Regarding the hydraulic fluid percentage limitation, as the word "about" permits some tolerance, see *In re Ayers*, 69 USPQ 109, and *In re Erickson*, 145 USPQ 207), the "at least 20%" of the instant claims is considered to read on "about 15%" of the prior art.

A *prima facie* case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties, see *Titanium MetalsCorp. of America v. Banner*, 778F.2d 775, 227 USPQ 773 (Fed. Cir. 1985). See MPEP 2144.05I.

Response to Amendment

15. The declaration filed on September 23, 2006 under 37 CFR 1.131 has been considered but is ineffective to overcome the Liesen (US 2004/0092409) reference. The declaration only provides data limited to organophosphorous compounds as component B) as claimed in instant claim 1, specifically TiBP, and does not provide data regarding carboxylic acid esters and polyether polyols. Therefore the declaration is insufficient to overcome the claims because it does not address all the components recited in the Markush group for component B) of claim 1.

Conclusion

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AK

Amina Khan, PhD
January 6, 2006

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